

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-15 (Canceled).

Claim 16 (New): A hydrogen reservoir comprising a substance suitable for storing hydrogen, said substance being made up of nano-structured silicon.

Claim 17 (New): A hydrogen reservoir as claimed in claim 16, said substance being made up of meso-porous and/or nano-porous silicon nanostructures.

Claim 18 (New): A hydrogen reservoir as claimed in claim 16, said substance being made up of nano-structured silicon, porous and compacted.

Claim 19 (New): A hydrogen reservoir as claimed in claim 16, said substance being made up of nano-structured silicon, porous, ground and compacted.

Claim 20 (New): A manufacturing process for a hydrogen reservoir, comprising porosifying silicon in order to produce meso-porous and/or nano-porous silicon nano-structures and to store hydrogen in the nano-structures by creating chemical bonds between the hydrogen and the silicon.

Claim 21 (New): A manufacturing process as claimed in claim 20, wherein the creation of the chemical bonds between the hydrogen and the silicon is obtained through action of an acid.

Claim 22 (New): A manufacturing process as claimed in claim 20, comprising subjecting monocrystalline, polycrystalline or amorphous silicon to an electrochemical anodisation implementing an acid and making it possible to simultaneously obtain the porosification of the silicon and the storage of the hydrogen.

Claim 23 (New): A manufacturing process as claimed in claim 22, wherein the acid implemented is hydrofluoric acid.

Claim 24 (New): A manufacturing process as claimed in claim 20, further comprising a subsequent step comprising compacting the nano-structured silicon.

Claim 25 (New): A manufacturing process as claimed in claim 24, further comprising, before the compaction step, a step for grinding of the nano-structured silicon.

Claim 26 (New): A method for extracting hydrogen from a hydrogen reservoir as claimed in claim 16, wherein hydrogen is stored in the hydrogen reservoir, the method comprising bringing about the breakage of the chemical bonds between the hydrogen and the silicon in order to extract the hydrogen.

Claim 27 (New): A method for extracting hydrogen as claimed in claim 26, wherein the breakage of the chemical bonds between the hydrogen and the silicon is brought about by an input of energy chosen from among chemical energy, thermal energy, mechanical energy, radiant energy and the energy of an electric field.

Claim 28 (New) A method for extracting hydrogen as claimed in claim 26, further comprising recharging the hydrogen reservoir by putting said substance in contact with an acid.

Claim 29 (New): A fuel cell system or fuel cell including a hydrogen reservoir as claimed in claim 16.

Claim 30 (New): A hydrogen motor system or hydrogen motor including a hydrogen reservoir as claimed in claim 16.